

## Resume for Michael O'Connor

12. NAME  Michael J. O'Connor	13. ROLE IN THIS CONTRACT  Project Manager & Engineer	14. YEARS EXPERIENCE	
		a. TOTAL 20	b. WITH CURRENT FIRM 8

15. FIRM NAME AND LOCATION (City and State)  
  
Quantum Engineering & Development, Inc., Tukwila, WA

16. EDUCATION (DEGREE AND SPECIALIZATION) BSME/1984 MBA/1988	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)  Mechanical Engineer/WA/04
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)  
Mr. O'Connor has been involved in the engineering, development, construction, and project management of energy savings performance contracts for over thirteen years. He has performed energy and water projects in over 7,500,000 square feet of building space in the past 6 years, generating over \$50 million in performance contracting projects, and saving over \$3 million in energy and water costs per year. Mr. O'Connor has led the project development & sales efforts for all of these projects, has prepared energy studies, financial analyses, and contracts. He has managed in the engineering of the projects, and performed or managed construction management, balancing and commissioning, and monitoring & verification

### 19. RELEVANT PROJECTS

#	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	City of Edmonds Phase 1 & 2 ESCO Projects, Edmonds WA	18	15
a	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Project Manager</b> \$1,360,000 project cost, \$68,400 annual energy savings, \$159,000 utility incentive. Phase 1 converted the HVAC system in the Library from electric heat to heat pumps. Replaced fan coil units and corrected zoning issues through-out the City Hall. Phase 2 retrofits included installation of EMS for major HVAC units, and full commissioning of HVAC systems at eight buildings. Water conservation retrofits, and lighting retrofits in all City buildings included Traffic Signal LED retrofit		
	Evergreen Healthcare - Evergreen Hospital Lighting, Kirkland, WA	18	15
b	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Project Manager</b> \$267,000 project cost, \$28,600 annual energy savings, \$75,000 utility incentive. Lighting modifications retrofit any remaining T-12 or incandescent lighting with T-8, electronic ballast and compact fluorescent technology throughout the hospital and parking garage.		
	McNeil Island Corrections Center, Steilacoom, WA	18	15
c	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Project Manager</b> \$2,950,000 project cost, \$301,000 annual energy savings. Replaced heating systems and upgraded window systems in three Marine Buildings. Performed control upgrades, lighting retrofit, commissioning, and insulation upgrades throughout facility.		
	Stafford Creek Corrections Center – Boilers, Aberdeen, WA	18	15
d	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Project Manager</b> \$2,080,000 project cost, \$145,000 annual energy savings, \$51,000 utility incentive. Replaced gas fired furnaces in five buildings with new, high efficiency condensing boiler systems and hot water coils. Created four new boiler rooms and one new boiler building.		
	WA DVA Retsil VA Home – Condensate Project, Retsil, WA	18	15
e	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Project Engineer</b> \$313,000 project cost, \$51,000 annual energy savings. Replaced condensate receivers in five buildings. Upgraded condensate piping and insulation systems.		



## Resume for Gordon Helgeson

12. NAME  Gordon L. Helgeson	13. ROLE IN THIS CONTRACT  Construction Manager	14. YEARS EXPERIENCE	
		a. TOTAL 30	b. WITH CURRENT FIRM 8
15. FIRM NAME AND LOCATION (City and State)  Quantum Engineering & Development, Inc., Tukwila, WA			
16. EDUCATION (DEGREE AND SPECIALIZATION) AA Mechanical Engineering Computer HVAC Analysis		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Gordon Helgeson has twenty eight years of experience in the engineering and construction industry in Seattle. For twelve years he worked as a Mechanical Design Engineer for a consulting firm, and for eleven years he worked as a Project Manager and Estimator for mechanical contracting firms. For the past six years he has worked as the Senior Construction Manager on energy and water conservation projects; managing multi-million dollar conservation retrofits.			
<b>19. RELEVANT PROJECTS</b>			
a	(1) TITLE AND LOCATION ( <i>City and State</i> ) WA Corrections Center for Women – Steam & Condensate, Purdy, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 27	CONSTRUCTION ( <i>If Applicable</i> ) 28
	(3) BRIEF DESCRIPTION( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$8,065,108 project cost, \$277,187 annual energy savings, \$818,855 utility incentive. Replaced campus steam system using steam to hot water heat exchangers with new, high efficiency boilers in 22 buildings. Installed campus-wide gas distribution system with propane-air backup. Installed new energy management system in several buildings, and performed campus-wide commissioning. Performed lighting upgrades and water conservation retrofits campus-wide		
b	(1) TITLE AND LOCATION ( <i>City and State</i> ) WA School for the deaf Phase 1 & 2 Energy Efficiency, Vancouver, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 27	CONSTRUCTION ( <i>If Applicable</i> ) 28
	(3) BRIEF DESCRIPTION( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$1,299,703 Combined project cost, \$49,000 combined annual energy savings. The first phase of this project added a new heating water system at two buildings, and performed system commissioning and balancing. Phase 2 consisted of the installation of new gas fired boilers, fan coil units, hot water radiators and domestic water heaters including new hot water piping and demolition of existing equipment at five buildings		
c	(1) TITLE AND LOCATION ( <i>City and State</i> ) City of Edmonds Phase 1 & 2 ESCO, Edmonds, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 27	CONSTRUCTION ( <i>If Applicable</i> ) 28
	(3) BRIEF DESCRIPTION( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$1,360,000 project cost, \$68,400 annual energy savings, \$159,000 utility incentive. Phase 1 converted the HVAC system in the Library from electric heat to heat pumps. Replaced fan coil units and corrected zoning issues throughout the City Hall. Phase 2 retrofits included installation of EMS for major HVAC units, and full commissioning of HVAC systems at eight buildings. Water conservation retrofits, and lighting retrofits in all City buildings included Traffic Signal LED retrofit		
d	(1) TITLE AND LOCATION ( <i>City and State</i> ) WA School for the Blind – Solar Project, Vancouver, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 27	CONSTRUCTION ( <i>If Applicable</i> ) 28
	(3) BRIEF DESCRIPTION( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$144,000 project cost, \$500 annual energy savings, \$15,000 utility incentive. Designed and installed a 10 kW solar photovoltaic array, wiring, inverter, and kiosk.		
e	(1) TITLE AND LOCATION ( <i>City and State</i> ) WA State Patrol Bellevue & Bremerton Headquarters, Energy Efficiency Bellevue & Bremerton, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 27	CONSTRUCTION ( <i>If Applicable</i> ) 28
	(3) BRIEF DESCRIPTION( <i>Brief scope, size, cost, etc.</i> ) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$995,000 project cost, \$41,000 annual energy savings, \$132,000 utility incentive. Measures at Bellevue resulted in new Energy Management System, replacement of failed boiler and chiller, and full commissioning and VAV Retrofit. Bremerton consisted of replacing heat pump units with split system heat pumps, new EMS and full TAB and Commissioning. Lighting and Water retrofits were also done at both facilities.		



## Resume for Randall McPherson

12. NAME Randall McPherson	13. ROLE IN THIS CONTRACT Construction Manager	14. YEARS EXPERIENCE	
		a. TOTAL 23	b. WITH CURRENT FIRM 1

15. FIRM NAME AND LOCATION (City and State)

Quantum Engineering & Development, Inc., Tukwila, WA

16. EDUCATION (DEGREE AND SPECIALIZATION) Local 66 Sheet Metal Apprenticeship training – 1993-1997 – Journeyman; Quickpen Estimating Training – 1992 Pressure Vessel Welding (ASME) Certification – 1990 Medical Gas & Silver Soldier Certification - 1994 Seattle University – 1986-1989	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Mr. McPherson has twenty plus years of experience and expertise in all facets of the construction industry. He has had successful completion of many fast track million dollar projects and is proficient in developing partnerships with owners, architects, engineers, local building officials, suppliers and contractors with an emphasis on costs and completion schedule. Mr. McPherson is versed in project estimating, design, building codes, safety regulations, contracts, site management (including direction of work force), procurement of materials and on-site installations.

### 19. RELEVANT PROJECTS

#	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
a	Selah School District, Selah WA	5	11
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$1,163,000 project cost, \$112,000 annual energy savings, \$180,000 utility incentive. Installed new energy management system in three schools, performed lighting retrofit, water conservation retrofits, and replaced cooling tower in high school with new air cooled condenser.		
b	Central Kitsap School District, Silverdale WA	5	11
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$1,072,615 project cost, \$4,909 annual energy savings, \$7,809 utility incentive Clear Creek Elementary, PineCrest Elementary, Emerald Heights Elementary, Fairview Jr. High School, Klahowya Secondary School, Olympic high School, Jenne Wright, and Food Services all will receive upgrades to their respective heating and ventilation control systems. All of these controls upgrades will be fully commissioned, as will the existing controls at Cottonwood Elementary School. The lighting systems in these schools will be retrofit to new, T-8 lamps and electronic ballasts, and metal halide fixtures will be replaced with new, T-8 fixtures. A new weather station will be added to the District irrigation control system, and audits will be performed on the existing irrigation systems.		
c	DSHS Region 2 Headquarters, Yakima, WA	5	11
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manager \$381,942 project cost, \$19,428 annual energy savings, \$12,384 utility incentive. Installed Variable Frequency Drives (VFD's) on the make-up air handling units, central building exhaust fan and the condenser water pumps. Replaced HVAC Diffusers, installed vending misers, testing and rebalancing of HVAC equipment and retro commissioning on existing controls system		
d	North Kitsap School District, Poulsbo, WA		
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Construction Manger \$702,000 project cost, \$102,000 annual energy savings, \$106,000 utility incentive. Performed control upgrades, water conservation upgrades, irrigation system upgrades, and lighting retrofit in four schools.		
e			
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		



## Resume for Grant Thorsland

12. NAME Grant A. Thorsland	13. ROLE IN THIS CONTRACT Project Manager, Commissioning Manager	14. YEARS EXPERIENCE	
		a. TOTAL 18	b. WITH CURRENT FIRM 8

15. FIRM NAME AND LOCATION (City and State)  
Quantum Engineering & Development, Inc., Tukwila, WA

16. EDUCATION (DEGREE AND SPECIALIZATION) Computerized (DDC) EMCS Training; Cert. Elec. Laddex-'s Training, Alerton Controls, Barber Coleman, Johnson Controls, Landis & Gyr Powers, Staefa Controls Training, NADCA Sponsored, ASHRAE Sponsored	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)  
Mr. Thorsland has worked extensively in all phases of testing, adjusting & balancing of constant and variable volume air and hydronic distribution systems in accordance with NEBB & AABC procedural standards. He is adept at duct pressure leakage testing; variable and constant volume fume hood certification, sound and vibration testing and fan performance calculations. Mr. Thorsland has vast experience in field engineering and the troubleshooting of deficient air and hydronic conveying systems. He has both managed and executed building commissioning projects. He has performed pre-construction plan review and course-of-construction inspection of mechanical system installations.  
Mr. Thorsland has performed technical analysis including energy audits and cost estimates for over \$ 5 Million in performance contracting projects. He is adept at baseline monitoring and field testing, engineering calculations, and cost estimating of proposed measures.

### 19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State) Coyote Ridge Corrections Center, Connell, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 17	CONSTRUCTION (If Applicable) 17
a	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager \$736,286 project cost, \$39,919 annual energy savings, \$74,538 utility incentive. Replacement of failing gas/electric HVAC units with new gas/electric HVAC units. and new 365 day programmable thermostats. Lighting retrofit lamps and ballasts were provided as part of the energy project. Upgraded irrigation system and controls.		
b	(1) TITLE AND LOCATION (City and State) Cedar Creek Corrections Center, Littlerock, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 17	CONSTRUCTION (If Applicable) 17
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager \$581,000 project cost, \$66,000 annual energy savings, \$35,000 utility incentive. Installed a new campus wide Energy Management System (EMS); Commissioned new and existing systems; Replaced the existing oil fired steam boilers with one new propane fired condensing hot water boiler. Performed lighting retrofits, including Occupancy sensors.		
c	(1) TITLE AND LOCATION (City and State) Battle Ground School District, Battle Ground, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 17	CONSTRUCTION (If Applicable) 17
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager \$777,000 project cost, \$80,600 annual energy savings, \$21,000 utility incentive. New air handling unit level controls throughout Prairie High School, installation of a new water side economizer, and replacement of the existing domestic hot water storage tank, piping revisions; Lighting & Water Retrofits; Ceiling Insulation.		
d	(1) TITLE AND LOCATION (City and State) WA State Patrol Training Academy, Shelton, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 17	CONSTRUCTION (If Applicable) 17
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager \$333,000 project cost, \$30,000 annual energy savings, \$26,000 utility incentive. Mechanical and controls measures throughout multiple buildings resulted in new Energy Management System; installation of CO2 sensors for economizer control; installation of programmable thermostats & vending misers. We also installed a high efficiency condensing boiler to accommodate the pool and domestic hot water. Lighting & water retrofits were also performed		
e	(1) TITLE AND LOCATION (City and State) Selah School District, Selah, WA	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES 17	CONSTRUCTION (If Applicable) 16
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager \$1,163,000 project cost, \$112,000 annual energy savings, \$180,000 utility incentive. Installed new energy management system in three schools, performed lighting retrofit, water conservation retrofits, and replaced cooling tower in high school with new air cooled condenser.		



## Resume for Lonn Inman

12. NAME  Lonon Inman	13. ROLE IN THIS CONTRACT  Project Manager	14. YEARS EXPERIENCE	
		a. TOTAL 20	b. WITH CURRENT FIRM 3

15. FIRM NAME AND LOCATION (City and State)  
Quantum Engineering & Development, Inc., Tukwila, WA

16. EDUCATION (DEGREE AND SPECIALIZATION) Nebb Tab Technician Certified; Green River Community College DDC Energy Management Control Training; L&I Approved Electrician Nuclear Work Environment Certification; CTI Cooling Tower Cert. City of Seattle Fire & Life Safety Systems Certified	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)  
Mr. Inman has over 6 years experience managing and performing commercial and industrial electrical contracting and energy management controls system installations. Mr. Inman served as a NEBB certified TAB supervisor and has worked extensively in all phases of testing, adjusting & balancing of constant and variable volume air and hydronic distribution systems in accordance with NEBB & AABC procedural standards. Mr. Inman has audited and commissioned over \$20 Million in performance contracting projects. He acts as Project Manager as well as Project Engineer on various projects. He is adept at baseline monitoring and field testing; evaluating facility operation and maintenance procedures for mechanical and electrical systems; analyzing trend data and field test data; engineering calculations, and cost estimating of proposed measures.

### 19. RELEVANT PROJECTS

#	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
a	WA Corrections Center for Women  Project Manager \$8,065,108 project cost, \$277,187 annual energy savings, \$818,855 utility incentive. Replaced campus steam system using steam to hot water heat exchangers with new, high efficiency boilers in 22 buildings. Installed campus-wide gas distribution system with propane-air backup. Installed new energy management system in several buildings, and performed campus-wide commissioning. Performed lighting upgrades and water conservation retrofits campus-wide.	18	18
	<input checked="" type="checkbox"/> Check if project performed with current firm		
b	Port Angeles School District, Port Angeles, WA  Project Manager \$87,622 project cost, \$4,909 annual energy savings, \$7,809 utility incentive The new system consists of one, self-contained, 15 Ton rooftop air source heat pump. The heat pump has integral supplemental heaters, and the 40kW duct heater will be disconnected. The two, 3 kW heaters will continue to be used as zone heating coils. A new, programmable thermostat is used to control the unit; including start/stop, economizer and heat pump functions.	18	18
	<input checked="" type="checkbox"/> Check if project performed with current firm		
c	Central Kitsap School District, Silverdale, WA  Project Manager \$1,072,615 project cost, \$4,909 annual energy savings, \$7,809 utility incentive Clear Creek Elementary, PineCrest Elementary, Emerald Heights Elementary, Fairview Jr. High School, Klahowya Secondary School, Olympic high School, Jenne Wright, and Food Services all will receive upgrades to their respective heating and ventilation control systems. All of these controls upgrades will be fully commissioned, as will the existing controls at Cottonwood Elementary School. The lighting systems in these schools will be retrofit to new, T-8 lamps and electronic ballasts, and metal halide fixtures will be replaced with new, T-8 fixtures. A new weather station will be added to the District irrigation control system, and audits will be performed on the existing irrigation systems.	18	18
	<input checked="" type="checkbox"/> Check if project performed with current firm		
d	North Kitsap School District, Poulsbo, WA  Project Manager \$702,000 project cost, \$102,000 annual energy savings, \$106,000 utility incentive. Performed control upgrades, water conservation upgrades, irrigation system upgrades, and lighting retrofit in four schools.	18	18
	<input checked="" type="checkbox"/> Check if project performed with current firm		
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	<input checked="" type="checkbox"/> Check if project performed with current firm		

## Resume for Marcus Edial

12. NAME <b>Marcus Eidal</b>	13. ROLE IN THIS CONTRACT <b>Commissioning Engineer</b>	14. YEARS EXPERIENCE	
		a. TOTAL <b>11</b>	b. WITH CURRENT FIRM <b>4</b>
15. FIRM NAME AND LOCATION (City and State)  <b>Quantum Engineering &amp; Development, Inc., Tukwila, WA</b>			
16. EDUCATION (DEGREE AND SPECIALIZATION) <b>Nebb Tab Technician Certified</b>		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) <b>Marcus has extensive experience and knowledge in HVAC systems and testing and balancing systems. He has worked with some of the finest control and balancing companies.</b>			

### 19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
a	<b>Coyote Ridge Corrections Center, Connell WA</b>	<b>5</b>	<b>11</b>
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Commissioning Technician</b> \$736,286 project cost, \$39,919 annual energy savings, \$74,538 utility incentive. Replacement of failing gas/electric HVAC units with new gas/electric HVAC units. and new 365 day programmable thermostats. Lighting retrofit lamps and ballasts were provided as part of the energy project. Upgraded irrigation system and controls.		
b	<b>WA Corrections Center for Women, Purdy WA</b>	<b>5</b>	<b>11</b>
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Commissioning Technician</b> \$8,065,108 project cost, \$277,187 annual energy savings, \$818,855 utility incentive. Replaced campus steam system using steam to hot water heat exchangers with new, high efficiency boilers in 22 buildings. Installed campus-wide gas distribution system with propane-air backup. Installed new energy management system in several buildings, and performed campus-wide commissioning. Performed lighting upgrades and water conservation retrofits campus-wide.		
c	<b>DSHS Region 2 Headquarters, Yakima, WA</b>	<b>5</b>	<b>11</b>
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Commissioning Technician</b> \$381,942 project cost, \$19,428 annual energy savings, \$12,384 utility incentive. Installed Variable Frequency Drives (VFD's) on the make-up air handling units, central building exhaust fan and the condenser water pumps. Replaced HVAC Diffusers, installed vending misers, testing and rebalancing of HVAC equipment and retro commissioning on existing controls system		
d	<b>Selah School District, Selah, WA</b>		
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Commissioning Technician</b> \$1,163,000 project cost, \$112,000 annual energy savings, \$180,000 utility incentive. Installed new energy management system in three schools, performed lighting retrofit, water conservation retrofits, and replaced cooling tower in high School with new air cooled condenser.		
e	<b>McNeil Island Corrections Center, Steilacoom, WA</b>		
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> <b>Commissioning Technician</b> \$2,950,000 project cost, \$301,000 annual energy savings. Replaced heating systems and upgraded window systems in three Marine Buildings. Performed control upgrades, lighting retrofit, commissioning, and insulation upgrades throughout facility.		



## Resume for Jason Hite

12. NAME  Jason Hite	13. ROLE IN THIS CONTRACT  Commissioning Engineer	14. YEARS EXPERIENCE	
		a. TOTAL 12	b. WITH CURRENT FIRM 3

15. FIRM NAME AND LOCATION (City and State)  
  
Quantum Engineering & Development, Inc., Tukwila, WA

16. EDUCATION (DEGREE AND SPECIALIZATION) Associate of Occupational Studies/Air Conditioning and Refrigeration Technology- 1007	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)  
Mr. Hite has 12 years of experience in the energy-related engineering and services field. He has performed commissioning of HVAC Systems, lighting control systems, fire alarm systems and building security systems. He has also performed the Startup, commissioning, balancing and measurement of power consumption of major HVAC system components including fans, variable speed drives, pumps, chillers, cooling towers, boilers, terminal boxes, and electric heating coils. Mr. Hite performed calibration of airflow, pressure, and temperature sensors for EMS control systems, testing of HVAC system components to determine equipment capacity and has an in depth knowledge of control systems, system analysis and computer skills.

### 19. RELEVANT PROJECTS

a	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	Cedar Creek Corrections Center, Littlerock, WA	6	12
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Commissioning Technician \$581,000 project cost, \$66,000 annual energy savings, \$35,000 utility incentive. Installed a new campus wide Energy Management System (EMS); Commissioned new and existing systems; Replaced the existing oil fired steam boilers with one new propane fired condensing hot water boiler. Performed lighting retrofits, including Occupancy sensors.		
b	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	Stafford Creek Corrections Center	6	12
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Commissioning Technician \$2,080,000 project cost, \$145,000 annual energy savings, \$51,000 utility incentive. Replaced gas fired furnaces in five buildings with new, high efficiency condensing boiler systems and hot water coils. Created four new boiler rooms and one new boiler building.		
c	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	WA School for the Deaf Phase 1 & 2, Vancouver, WA	5	11
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Commissioning Technician \$1,299,703 Combined project cost, \$49,000 combined annual energy savings. The first phase of this project added a new heating water system at two buildings, and performed system commissioning and balancing. Phase 2 consisted of the installation of new gas fired boilers, fan coil units, hot water radiators and domestic water heaters including new hot water piping and demolition of existing equipment at five buildings		
d	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	North Kitsap School District, Poulsbo, WA	6	12
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Commissioning Technician \$702,000 project cost, \$102,000 annual energy savings, \$106,000 utility incentive. Performed control upgrades, water conservation upgrades, irrigation system upgrades, and lighting retrofit in four schools.		
e	(1) TITLE AND LOCATION (City and State)	(2) YEARS EXPERIENCE	
		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
	Battle Ground School District, Vancouver, WA	6	12
	(3) BRIEF DESCRIPTION(Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Commissioning Technician \$777,000 project cost, \$80,600 annual energy savings, \$21,000 utility incentive. New air handling unit level controls throughout Prairie High School, installation of a new water side economizer, and replacement of the existing domestic hot water storage tank, piping revisions; Lighting & Water Retrofits; Ceiling Insulation.		

## Resume for Brian Chandler

### **Summary of Qualifications**

HVAC apprentice with more than two and a half years experience in the installation and maintenance of commercial and residential HVAC. Dedicated and self motivated with a keen eye for detail, every job is performed with the highest level of quality every company and client should expect. With a positive and upbeat attitude, technical skills are applied to maintain, troubleshoot, install and repair ventilation, heating and air conditioning systems used in commercial and residential settings, which includes sheet metal ductwork & control instrumentation, and low voltage control wiring.

### **Education & Training**

Bellevue Community College, Bellevue, WA  
*Associate of Arts & Sciences (in progress)*

*September 2001 – 200x*

Lake Washington High, Kirkland, WA  
*High School Diploma*

*June 1998*

### **Professional Experience**

#### **HVAC Apprentice**

**October 2006 - present**

*Metro Air Inc. - Kirkland, WA*

- Assisted with the design and development of layouts for mechanical systems.
- Participated in the production of detailed schematics for HVAC.
- Performed air balance procedures to meet CFM specifications on blue prints per building requirements.
- Installed new units and / or replacement parts for existing units according to specifications and established safety guidelines.
- Assisted in the installation, maintenance and repair of all types of heating, ventilation, air conditioning, and environmental control systems.
- Performed routine service of all types of heating, ventilation, air conditioning, and environmental control systems.
- Both self performed and / or led a team of two to assemble duct work and install low voltage control wiring to be completed well within specified tight deadlines.

#### **HVAC Junior Installer**

**March 2005 – September 2006**

*Greenwood Heating & Air Conditioning - Kirkland, WA*

- Participated closely with a lead installer to assist in the design and installation of new residential furnaces and air quality systems.
- Interacted with homeowner's to ensure work quality and provide a step by step overview of how the customer's new purchase worked.
- Performed maintenance and service repairs on heating, ventilation, and air conditioning systems.

## Resume for Elissa Martino

### Education & Training

Holy Names Academy, Seattle, WA 1994

BCTI, Seattle, WA Graduated with Certificate in Business 1999

### Experience

#### *Construction Administration:*

Ms. Martino has been performing construction administration for ESCO projects with Quantum for the past five years. She prepares contracts, and assures compliance with requirements associated with prevailing wages, insurance, and bonding.

#### *Prior Experience:*

Technogym USA: Office Manager. Performed all basic office duties, including planning client visits and meetings. Organized and planned salesmen travel schedules and meetings across the country. Worked with Marketing Manager on organizing and preparing for conventions. Traveled to conventions and worked as spokesperson.

Il Bistro Restaurant: Bookkeeper. Performed daily bookkeeping including payroll and month end reports. Accepted incoming orders and deliveries. Managed schedules and menus.

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## Resume for Deborah Larson

### Education & Training:

Saint Martins College – Bachelor of Science in Mechanical Engineering 1998

- Master of Business Administration 1995

ISO 9000 Lead Auditor Training

Kaisen and TQM Training

Various Software training courses

2003 Leadership in Energy and Environmental Design Accredited Professional (LEED A.P.)

1998 Engineer in Training (EIT) Washington State

### Experience

#### *Energy Conservation*

Ms. Larson has performed engineering and project management on ESCO projects at the DVA Retsil VA Home, DOC Stafford Creek, DOC Mission Creek and DOC WCCW Energy.

#### *Prior Experience:*

*Keithly Barber Associates, Senior Project Manager;* Manage budget, scheduling and client contacts, review equipment installation, operation and function, evaluate systems and controls for possible savings, develop specifications for contract documents, review drawings and specifications for accuracy and completion.

*Heery International, Commissioning Agent;* Development commissioning plans, forms and procedure standards; evaluated and tested building equipment and systems, reviewed drawings, assisted in RFP/RFQ responses.

# *Firm Profile*

Interface Engineering provides multi-disciplinary mechanical/electrical/plumbing engineering services from four offices on the West Coast. With nearly 200 professional and technical associates, we approach each project with a process for integrated design, addressing building operational needs, thermal and acoustical comfort, energy and water conservation, maintenance and repair cost, environment impact and sustainability.

## **Sustainable Design & Energy Engineering**

Interface Engineering has extensive experience with the US Green Building Council LEED rating system. We have successfully certified 26 projects and have over 100 projects in various stages of design or completion with LEED goals. Currently, 39 members of our staff are LEED Accredited Professionals.

Interface Engineering has a team of energy analysts and design engineers with in-depth experience in energy retrofit projects. We offer services from energy audits, detailed energy studies, ECM design, construction administration, commissioning to measurement & verification.

## **Resume**

### **Stacey S. Lin, P.E./Principal-in-Charge**

Stacey oversees the firm design projects as a Principal-in-Charge. He ensures that all projects meet the client goals and expectations through direct interaction with clients and the design team. Stacey has expertise in managing and engineering complex retrofit projects with a strong energy efficiency and sustainable design focus.

#### *Relevant Experience*

Energy Consulting Experience; Oregon, Washington & California

- Over 500 Energy Audits and Detailed Energy Studies
- Over 500 Energy Analysis Report Reviews

State of Oregon Projects; Various Locations, Oregon

- The Commerce Building Major Renovation (SEED), Salem
- Pendleton State office Building Photovoltaic System, Pendleton
- Portland State office Bldg. HVAC Control Upgrades, Portland
- Oregon State Lottery Building Addition (SEED), Salem

Multnomah County Projects; Portland, Oregon

- Court House Electrical and Mechanical Upgrades
- Justice Center HVAC Upgrades
- McCoy Building HVAC Upgrades
- Mead Building Remodel
- Walnut Park Building HVAC Upgrades
- Yeon Maintenance Facility Remodel

OHSU Projects; Portland, Oregon

- Baird Hall Remodel
- Medical Research Building Remodels
- McKenzi Hall Remodels
- Casey Eye Institute Remodels

Portland State University Projects; Portland, Oregon

- Science I Building Remodel
- Lincoln Hall Electrical Upgrades
- Lincoln Hall Remodel (SEED) /LEED Gold Goal
- Academic and Student Recreation Center / LEED Silver Goal
- Smith Hall Remodel
- Forth Avenue Building HVAC Efficiency Upgrades (SEED)

Oregon State University Projects; Corvallis, Oregon

- Oak Creek Steam Supply Extension
- Linus Pauling Institute (SEED)

University of Oregon Projects; Eugene, Oregon

- Condon Hall Remodel
- Fenton Hall Library Remodel
- Watzek House Museum Plumbing Upgrades
- New Academic Learning Center (SEED/LEED)

Linfield College Projects; McMinnville, Oregon

- New Campus Utilities Distribution Systems
- New Heating Plant

Veterans Affairs Medical Center; Portland and Vancouver

- Main Hospital (70) Air Handling Unit Upgrades
- Building 16 HVAC Upgrades
- Vancouver Campus Boiler Plant Renovation
- Vancouver Campus Steam & Condensate Piping Replacements
- Vancouver Campus HVAC Control Upgrades

*Education*

Bachelor of Science, Mechanical Engineering, University of Science and Technology of China

Master of Science, Mechanical Engineering, Washington State University

*Registration*

Mechanical: Oregon

*Professional Affiliations*

American Society of Heating, Refrigeration, and Air-Conditioning Engineers

*\*Resume encompasses experience prior to Interface Engineering*